

OBSERVATIONS IN 1940 ON THE DISSEMINATION
BY ANTS OF THE SEEDS OF TRILLIUM
GRANDIFLORUM

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It has been possible to confirm in 1940, the observations made in 1939,¹ on the behavior of ants in the dissemination of seeds of *Trillium grandiflorum* Salisb. It was also determined that at least five ant species perform this dissemination.

In 1940, a populous, subterranean colony of *Formica neogogates* var. had established themselves in the lawn, about five feet from the group of *Trillium* plants. Before the *Trillium* seeds had ripened, July 19, 1940, ants from the nest were seen exploring the plants. As soon as ripe seeds were available, ants from this nest were tested to determine whether they would carry off seeds to their nest. To each of five ants, a freshly gathered *Trillium* seed was offered; each ant picked up the seed and carried it off in the direction of the nest. Each of these five ants was captured for the purpose of identification; each was identified² as the same species, *Formica neogogates* var. A sixth ant (not captured) was permitted to carry a fresh *Trillium* seed into the *Formica* nest.

It was presumed in 1939, that the ants not only ate the caruncle, but that they also gathered for food the pulp which surrounds the seeds in the capsule. In 1940, ants from the *Formica* nest were observed removing the fleshy pulp from the capsule; one ant carrying a fragment of pulp was traced to the nest.

As in 1939, a number of seed capsules which had been emptied, leaving only the thin shell of the capsule, were found beneath the plants. A ripe capsule which had just fallen was also watched. This soon became covered with the *Formica* ants, busy removing the seeds and pulp from the end which had broken away from the plant.

Although a considerable number of the *Trillium* seeds must have been carried into the *Formica* nest in the lawn, the presence of the grass around this nest made it most difficult to find any seeds which the ants had brought out of nest, after the caruncle

¹ RHODORA, vol. 42, number 497, page 194.

² All ant identifications were made by Mr. Lawrence G. Wesson, Boston, Mass., whose courtesy is greatly appreciated.

had been eaten off. Moreover, during the observations, there were numerous rains, some heavy, which may have washed away or covered discarded seeds. In contrast to the seventy seeds collected in and about the stone-pile ant nest in 1939, only two seeds could be found in 1940 which had been brought out of the *Formica* nest and dropped between the tufts of grass. These two, however, upon examination with a lens showed clearly the roughened surface close to the seed coat, where the caruncle had been gnawed away, without doubt for food. This indicates that the habit of finally casting out from the nest, the seeds from which the caruncle has been gnawed is relatively a constant behavior.

It was desirable to determine to what extent the *Trillium* seeds might be gathered by ant species other than *Formica neogogates* var. For this purpose some freshly gathered seeds were taken to another part of the grounds, at least one hundred feet from the group of plants. A seed was offered indiscriminately to any ant seen. If the ant picked up the seed and started off with it, that ant was collected for identification. Five ants responded and picked up the seed; none refused. Moreover, some ants too small to carry a seed, climbed upon it and apparently gnawed at the caruncle. Presumably, a considerable number of ant species, in the locality where *Trillium grandiflorum* grows, participate in the dissemination of the seeds.

The identifications by Mr. Wesson of ants tested at random, are:

1. A small specimen (brownish), *Lasius niger* var. *americanus*.
2. A larger ant (brownish), *Myrmica fracticornis*.
3. Two large black specimens. *Formica fusca subsericea*.
4. Large ant (black), *Camponotus herculeanus pennsylvanicus*.

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VICIA LATHYROIDES IN EASTERN VIRGINIA AND NEW TO NORTH AMERICA.—On March 30, 1937, while in Middlesex County, Virginia an occasion arose for an early-season field-trip into the region around Deltaville. The area is the tip of a small peninsula between the Rappahannock and the Piankatank Rivers, at the